

ABSTRACT

5 A solution for transmitting a plurality of carriers in a wireless system, such as
GSM, TDMA, and WCDMA includes dividing a base-band digital input signal into two
paths. In a reference path, an RF up-converter acts as a reference source for an
analog FF error canceling loop having an RF bandwidth much wider than the required
output (multiple carrier) bandwidth. The analog FF error loop also has an error-signal
bandwidth that is wider than the error-signal bandwidth available from current ADC- and
10 DAC-techniques. The other path feeds the base-band digital signal through another RF
up-converter to an MPA in a FF MCPA and uses a digital predistortion technique to
reduce distortion in the MPA, thereby easing the suppression demands on the analog
FF error canceling loop in the MCPA. The difference (error) signal between the desired
signal from the reference path and the actual MPA output signal is processed in an
15 analog RF FF loop for canceling unwanted signals at the MCPA output.